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THE SECOND GRADE

All science work in second grade is social in motive. In scope it offers opportunity for the care of pets and the study of animals; for gardening and excursions; for the cooking, serving, preserving, and testing of food materials; and for numerous experiments with a variety of other materials. The science work also offers many opportunities for experience in the technique of numbers, reading, writing, spelling, manual training, and the other special arts. One big project, the care of a dozen chickens, continues throughout the school year. There are a number of shorter activities, the first one being the preparation for a school fair, including exhibits of cooking, of summer collections, and of garden-products. Another activity is the making in clay and wood of a miniature Ringling Brothers' Circus. As an aid to the modeling and painting of the animals, the children study the habits of the elephant, camel, lion, tiger, giraffe, etc., in the Lincoln Park Zoo adjacent to the school. Colonial industries are studied, when the children are planning a colonial play and party for the senior class. The experimental work with minerals, begun in the first grade, though not treated as a special unit, is nevertheless included in the solution of a number of problems. In principle, however, all the activities in second grade help to extend the scope of the experiences created during the work of the previous year. The work in detail follows.

ACTIVITY I—THE SCHOOL FAIR

The impetus given in first grade to the collecting instinct is stimulated further by the request at the end of the year that each child, during his vacation, make or collect something of interest to display at the County Fair in October. The children, therefore, return in the fall carrying packages bulging with materials ready for instant attention. Necessarily, Fair work begins at once.

(a) SUMMER COLLECTIONS—

1. Showing to grade collections of stones, shells, mounted insects, pressed flowers, sheaves of grain, walnut-hulls, sumach-heads, kodak-books, etc.
2. Drawing pictures of places visited, relating experiences, answering questions, and exchanging information.
3. Labeling exhibits and planning final disposition, as home, museum, grade use, etc.

(b) FALL HARVEST—

1. *In the garden.*—Harvesting corn, sunflowers, and pumpkins in school garden. Selecting prize plants, digging up tallest cornstalk; largest sunflower plant, and longest pumpkin-vine. Collecting curious and interesting specimens such as blighted ears of corn, cobs with undeveloped grains, tiny silky ears, undeveloped pumpkins, insect pests, etc.
2. *Class work.*—The garden work is followed by several informal group lessons, so that children may have a further chance to ask questions about their specimens and to show them to each other. The information gathered covers points something like the following:
    - Cause of fungus growth on corn.
    - How worms get inside the husks.
    - Use of corn-silk and of tassels to the plant.
    - Use of prop-roots on cornstalks, of tap-roots on pumpkin-vines.
    - Why interior of cornstalk is fibrous, while interior of sunflower head is thick and spongy.
    - Ways that insects destroy plants.
3. *Measuring the harvest.*—Husking corn with old-fashioned husking-pins; shelling and measuring corn for exhibit; seeding sunflower heads; measuring, drying, and measuring again; labeling pumpkins, for Halloween, Thanksgiving, home, etc.

(c) HOME PETS—

Finding out kind of pets children wish to exhibit and planning ways of making them comfortable.

(d) MORNING EXERCISES.

Recalling and organizing interesting experiences in garden work for grade contribution to school exercise on *Crops*.*

ACTIVITY II—CHICKEN PROJECT—FALL QUARTER

Statement of General Management. The flock each year is a new one, ordered by the children and paid for with money advanced by the school office until this indebtedness can be settled with money got from the sale of eggs. The daily work at the henhouse, for convenience and economy of time, is done through committees, children serving twice a day in groups of two. A special teacher always accompanies them, for though keen in interest, they are weak in judgment and experience.

The committee reports to the grade each day, at a short period set aside for this purpose, but whenever a problem requires a longer discussion, it is continued during the next science period, and when finally

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**Year Book*, Vol. IV, page 24.

settled, the task involved is again handed back to the group for execution. For example, a self-feeding hopper planned by the grade is made by a committee in manual-training time. The children love this flexibility of method. They feel their problems are important and businesslike. They perform their duties with sincere pleasure and remarkable carefulness and show in many ways that their dozen hens are a cherished possession. The order of the work follows:

(a) GETTING THINGS IN ORDER FOR THE FLOCK—

1. *At hen-house.*—Open and air house; see that proper light, sunshine, and ventilation are provided. Sweep floor, wash nest-boxes, perches, and dropping-boards with hose.* Repair articles, sprinkle lime around, and ask janitor to whitewash walls.
2. *In shed.*—Clean and air grain-bin, oil padlock, and put on new hinges if needed. Hang all tools, pails, etc., on nails provided for the purpose, and stop all mouse- or rat-holes.
3. *In runway.*—Nail grit-hopper in position. As precaution against lice, prepare a sanitary dust-bath for hens, using following formula: One pound powdered sulphur, one pound slaked lime, one bushel sifted ashes.**
4. *Experimental work.*—What is lime? Recall acid test for limestone made in first grade; apply test to oyster-shells. Make lime by heating oyster-shells or limestone. Slake some lime from barrel in chicken-shed.

   What is sulphur? Taste, feel it, and burn it. Smell before and while burning. In what way is sulphur used at home?

(b). LEARNING TO SUPPLY THE NEEDS OF THE CHICKENS—

1. *Observations.*—Recalling observations made on first-grade excursion to farm and vacation experiences in country.
2. *Food lists.*—Listing available food resources; corn, sunflower seeds, and scraps from school kitchen. Planning home contributions, such as apple peelings, cabbage and lettuce leaves, parsley and celery tops, and meat bones for grinding in bone-grinder.
3. *Writing orders.*—Learning to write orders, for bags of bran, bales of hay, bags of mixed grain, etc.
4. *Farm excursion.*—Excursion to farm for winter supply of food. A large corn shock is pushed apart, the ears hunted out, packed in bags, and the stalks left in an orderly pile for the farmer to use. Heads of cabbage are also bought for green food.
5. *Storing supplies.*—Corn is husked, tied in bundles, and hung in school attic to dry, after which it is shelled and stored in mouse-proof cans. Cabbages are buried in school garden for spring use. The

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*Furniture for chicken-house is light and movable.

**For dirty work, such as sifting ashes, the children wear large aprons and a head covering. The wagon used for hauling articles was contrived by a former class and built upon a set of old baby-carriage wheels.

following reports, written for the *Parker Weekly,* describe this experience:

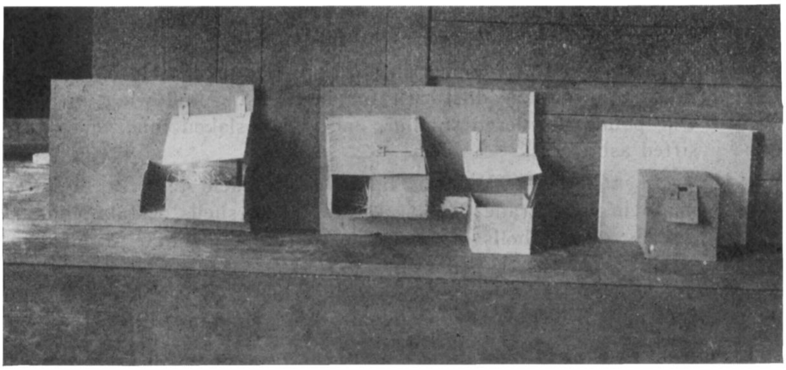
First we dug a hole, one yard wide and one yard deep. Then we put a box into the hole. Then we put some straw and paper in the bottom of the box, and then we put the cabbage in. Then we covered it with boards.

JACK.

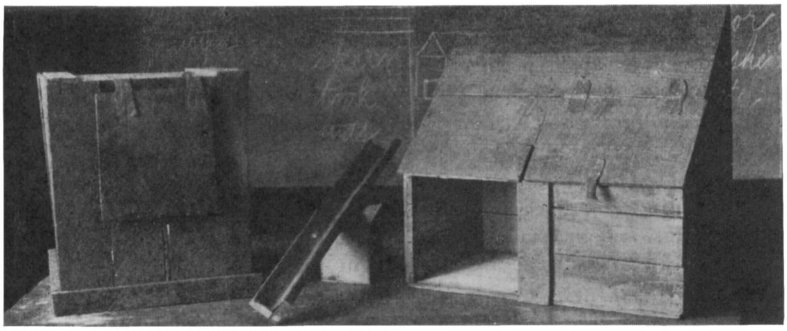
* * *

It is March. If we do not dig up the cabbage before it gets warm, it will rot. So we went with Mr. Miller to where it was buried. The boards were frosted, and it was hard to dig. The cardboard was frosted, and the earth was frozen and hard. The cabbage had not rotted. The leaves are for the chickens.

MARGARET.



MODELS OF CLOSED NESTS



THE FINISHED NESTS

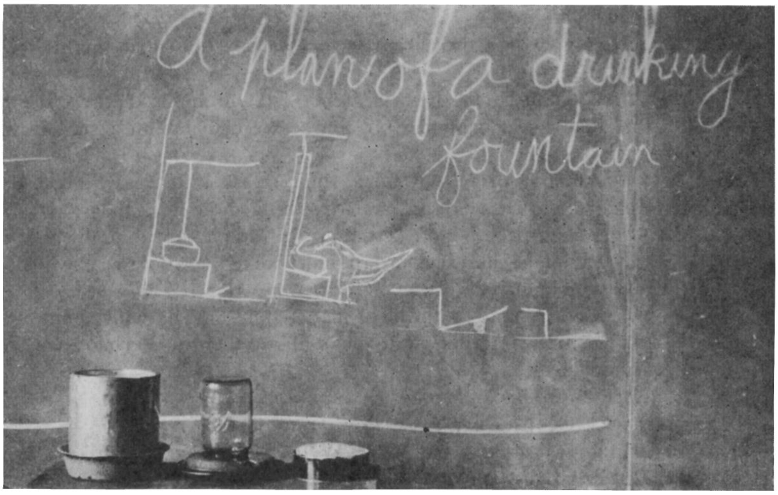
6. *Grit.*—Learning why chickens need grit and where to find it. Cut open a gizzard, note contents, wash and count number of stones

found. Why are there so many? Plan ways to save money by collecting sand and gravel from the lake shore, by collecting charcoal from bonfires along shore, by bringing from home clam and oyster-shells, pieces of broken dishes, dried egg-shells, etc., to be pounded up at recess time.

7. *Models.*—Planning models of self-feeding grit-hopper, closed nests and water-fountains. Discuss hoppers, nests, etc., seen on farms. Make drawings and cardboard models at home; and construct articles in shop according to plan decided upon in class.

The following is a stenographic record of a report period followed by a discussion of models for drinking-fountains.

Grade teacher (to Miss B., who superintends children's work at the hen-house). It looks today as if we had several more suggestions for water-fountains. After the children read their reports, we will listen to a description of the new models.



MODELS AND DIAGRAM OF DRINKING FOUNTAINS
(The model to the left is Margaret's, the middle one was made by George, while Justin drew the diagram on the board)

Barbara (reading). We found four eggs, two in the corner nest and two in the closed nest. Margaret's water-pan didn't work. We looked to see if there was any straw in it, and there was much of it, right where the chickens drink. The straw had come inside where the water was, and we had to clean it out. *(Continuing orally.)* After we cleaned it out and put fresh water in, we put a box on the ground and set the water-pan on it. We did that so the straw would not get in. I should think that the people who go out this afternoon would like to see if there is any straw in the pan.

Margaret. I don't see how the straw could get through.

Barbara. I saw it.

Jim. I will tell you how it could get in. The chickens were scratching around.

Margaret. I know it could not have gotten through the hole, because the hole is so small you can scarcely see it. It may have been in the can.

Barbara. Maybe they kicked it in.

Grade teacher. I think Margaret is right. The chickens could not kick straw into the can unless the child who filled it with water was very slow in putting the lid on. The real danger in her plan is that straw will get into the water after it flows through the hole into the open pan, and to set the fountain on a box was a good idea. Philip, will you read your report?

Philip (reading). We found a piece of brick and some sticks in the fountain. We asked the children not to throw bricks or sticks or anything in the fountain, because it might easily hit a hen and kill her. If we find any more, we will put up a sign.

Jim. They ought not to throw stones or sticks, because it might break an egg, you know.

Grade teacher. I am sorry the wire fence isn't higher. In the old runway nothing like that could happen. Of course we can put up a sign if you think it is needed.

Miss B. We ought not to put up a sign unless it is really necessary. People will think we are fussy. Jim has something more to tell.

Jim. It is important, too. You better not go down that door by the fire escape, because we tripped there yesterday and cracked a whole egg.

Grade teacher. Thank you, Jim. *(Addressing Mr. M., who has just entered the room.)* George and Justin have made some models which they wish us to see. May we use your period to hear about them? Perhaps you can help us decide upon them.

Mr. M. Certainly. I should like to stay.

Grade teacher. George, you may show your model first.

George (coming to front of room). Well, here are two pans.

Mr. M. But what are you making, a cake?

George. I am making a model of a water-fountain. I took two pie-tins and I took a can-opener, and I cut a hole so I could put a jar in and then a hole for the hen's head, and then I got another tin to put under it. Then, in the pantry, I just got the right bottle to fit in there, and then with a knife I chopped a rough place on the edge of the bottle so the water could come out. I am going to make this bigger and put more holes in it.

John B. I should think if a hen put her head through the hole there she would cut her head on the tin.

George. But this is only a model. I am going to make a better one.

Ann. If it were made out of wood it would not cut the hen.

Justin. If you made it of wood, the little pieces of wood would fall off and get into the water, and the chickens would drink them.

George. I could make it of two pieces of wood.

Justin. Then why don't they have wood pipes in the city, if the wood would not break off?

Mr. M. I will tell you something. A long time ago, in the city of Chicago, they had wood pipes in the street instead of iron pipes.

George. They would rot.

Mr. M. No, so long as there was water in them they would not rot. But the city found it was cheaper and better to use iron pipes.

Barbara. George, are you going to have glass in your real fountain?

George. Sure.

Barbara. But suppose *(touching the bottle)* it falls over and breaks?

George. But the hole is not going to be so loose.

Barbara. Don't you see that wood is lighter than glass, and that would make it fall over.

George. The real one would be bigger—it would look just like an aeroplane.

Miss B. Mr. M., if this model were larger, do you think it would work?

Mr. M. I think it would work beautifully.

Grade teacher. George has done some good work, and I am proud of him. Justin is waiting to explain his picture.

Justin. This is a pan with a lid on it, fastened at the top to a pulley and there is a spring down here and when the chicken steps on this spring, she pushes it down and that raises the lid, and when she gets off, the lid will close down again.

Grade teacher. I once saw a grain-hopper that worked with a spring.

Mr. M. If I were a chicken and saw a spring like that, I would not get on it.

Justin. But there is going to be a board over it.

Mr. M. Oh, then there is to be a little platform, and the spring is under the platform. How high is that platform going to be from the ground?

Justin. Just as high as the spring will let it go. The spring will come up three or four inches.

Gertrude. I should think the hens might be afraid. Chickens frighten quite easily.

Justin. But the spring would not come up as quick as you think it would. It would be the right kind of spring.

Jane. She might not have enough sense.

Justin. But she would come there, and very naturally she would learn it. The hen would go there once in a while and she would get the water.

Henry. She would learn how to do that—like the closed nest. There is only one door to get in. She will learn to step on the board.

Miss B. I think a hen very soon gets accustomed to a thing of that kind.

John B. You ought not to have it up against the wall. There would be a row of chickens around, and they would get the water all at once.

Justin. If it wasn't next to the wall, it would be next to the fence.

Mr. M. Suppose there were a number of chickens standing around the fountain, and they had their heads in that place drinking and the hen on that board should step off? What would happen then?

Justin. But they would never go there if it was crowded—they wouldn't if it once happened.

Grade teacher. Mr. M., do you think it is possible for Justin to make such a fountain?

Mr. M. I question very much whether the chickens will want to drink from that fountain. It might frighten them. I think Jane had the right idea.

Justin. But they really wouldn't know, because it would come down slowly.

Grade teacher. Do you plan to make the fountain at home or at school?

Justin. I will make it at home.

Grade teacher. If Justin will make one, we shall be glad to try it, just as we are testing Margaret's fountain now.

Kendall. Well, what if the chicken comes along here and the spring doesn't work?

Justin. But I would make it so it would work.

Kendall. Well, see here. This is one thing—people make automobiles to run, but sometimes they don't run, and it might be the same with the water fountain.

Justin. But automobiles are not made with springs and cans.

Grade teacher. I think, however, that Kendall's caution is a good one.

Justin. But every once in a while we would oil it up.

Grade teacher. The idea is certainly worth working on. Perhaps your father will help you make it.

Jim. The chickens will be happy when we get all this done.

* * *

8. *Observations on molting.*—For a week or so mount each day on paper the feathers brought in from the hen-house, noticing the color, size, shape, and number of each kind. Bring hen to class, and identify feathers on chart with feathers on hen's body. Note way feathers overlap, and compare with fish-scales. Note glossy appearance of coat. Compare with hairs on head, on hand, etc. Why is a chicken's coat glossy and oily?

Experiment.—To show that sunflower seeds contain oil, in order to understand why poultry-men feed them at molting time.

Apparatus necessary.—A test-tube fitted with a one-hole stopper and a delivery-tube; Bunsen burner.

After putting sunflower seeds in the test-tube, heat the tube in the Bunsen flame and pass the gas which comes through the delivery-tube into a bottle of water. The children see that the gas condenses and forms a dark oil which floats on the water.

Questions.—Why is it necessary for a hen to have food which contains oil? How does the oily coat protect the chicken against rain? How do canary birds behave when they are molting? Did the ring-doves in first grade molt?

WINTER QUARTER

The chickens purchased each fall are early spring pullets, so that laying may begin before Christmas, though this rarely happens. No doubt the hens have to grow accustomed to their new home, to the noise of the playgrounds, and to the many little people who care for them. The children, however, are impatient for the fun of gathering eggs, and after molting is over are constantly asking, "Why don't the hens lay?" From various sources they learn that men who keep hens for eggs know the food-values of different grains, that they stress the importance of feeding a balanced ration, and that they keep their flocks active and contented. Experiments with grains, reading-lessons on methods of feeding, and finally egg-marketing, which by February assumes the proportion of a flourishing business, constitute this term's work with the chickens.

(a) EXPERIMENTAL PROBLEMS WITH GRAINS—

1. *To identify grains used by poultrymen.*—Display bundles of wheat, oats, buckwheat, and heads of Kaffir corn. Let each child thresh a head of wheat in his hands, blow chaff away and observe the seeds. Repeat process with oats and other grains. Which grain is easiest to thresh? What foods are made from these grains?

   To find how many different grains the commercial chicken-food contains, distribute to the class a cupful of the mixed grain. Have the children sort it into piles, collect these separately, and so determine the relative amount of each kind of grain. What grain do the chickens eat in largest quantity? Of what grain do we eat the most?

2. *Testing grains for starch.*—Show laundry- and cooking-starch, and discuss uses. Let children make starch from each and starch pieces of cloth. Dry and compare results. Apply iodine test to lumps of starch and to starch solutions which have been made. Note chemical changes. Test for starch the cereals brought by children to school. Explain the effect of starchy foods on body. Is starchy food good for children? For chickens?

3. *Washing test.*—Washing-test to find which grains contain most starch and gluten. The materials used are wheat flour, rye, buckwheat flour, cornmeal and oatmeal. Divide class into groups, giving to each child a quarter of a cup of flour. Tie flour into piece of cheesecloth, and wash bag in bowl of water. Squeeze bags dry, open, and compare results. Which crumbles? Which is sticky? Which will pull? Explain what gluten is. Which grain contains most gluten? Which contains least gluten? Do our chickens need gluten?

   Examine bowls of water and pour off the clear water. What remains? Pour all starch from corn-meal bowls together. Compare with results from other groups. From which grain did we get most starch? Least starch? Which grain do we feed most to chickens? Are we feeding wisely?

CORRELATED READING

F. W. Parker Leaflets on methods of threshing grains; on chicken-foods and methods of feeding, mixing hot mashes, ways of sprouting oats, feeding to give exercise, etc.

(b) EGGS—

With great joy, the children give the first egg to the principal, and for weeks after they eagerly buy the eggs for gifts to parents and to friends. Later, accounts are opened with teachers and pupils of other grades, and at the end of each school month the class make out egg-bills, collect the money, and receipt for same. Two of the egg-bills follow.

Miss Hendry's Egg Bill for February

1 egg	$ .06
2 eggs	.12
3 eggs	.18

PAID Clerk,

RICHARD CARTER, Second Grade Store

Marianne's Egg Bill for April

1 egg	$ .04
2 eggs	.08
3 eggs	.12
4 eggs	.16
5 eggs	.20
6 eggs	.24
7 eggs	.28
8 eggs	.32

PAID Clerk,

JANE FINN, Second Grade Store

Eggs Gathered During Winter Quarter, 1918

January	33
February	143
March	173
Total	349

About this time an excursion is made to South Water Street, to watch the men candle and sort eggs, and to visit a cold-storage plant. In this way the children get a better appreciation of the value of a perfectly fresh egg and an understanding of the terms *firsts, seconds,* etc., as used in market quotations, which they cut out and bring to school, in order to help decide the selling price of their eggs. The following stories and poems were written this year for the *Parker Weekly*:

SOUTH WATER STREET

We went down to South Water Street. A man opened a box of lemons, to show us how they were packed. There were some very big Spanish onions. We went into the rooms where they ripen bananas. It was very hot. We saw a man looking through eggs with a strong light. We took two of our eggs, and he said they were strictly fresh. The rotten eggs were black and watery inside.

MARGARET.

THE FRESH EGG

I brought it home in my pocket. I cooked it. My mother helped me. I ate it. It was good.

JIM.

ORIGINAL POEMS

Goldie has a cosy nest,
Where she lays her eggs in rest.

* * *

When the yellow sunshine comes,
Chickens like to play,
Scratching in the ground for food,
And sometimes in the hay.

LETTER FROM A FORMER MEMBER OF SECOND GRADE

Cambridge, Mass., Mar. 16, 1918.

DEAR AUNT M.—I have 13 hens. They lay 6 to 10 eggs a day. Today I put in half a barrel of sawdust. The chickens cleaned themselves in it. In January, I got from 4 or 5 to 8 eggs a day. Some of the days when they laid 8 eggs, the weather was 10 degrees below zero. The hens are all well. I want you to tell me about the chickens at the Parker School. I am getting more eggs than any of my neighbors.

Love from,
WALLACE.

SPRING QUARTER

The culminating feature of the chicken project should be the care of the baby chicks. But the thoughtful and systematic supervision given at the hen-house during the previous terms has never been possible in the spring, and so, to insure safety to the chicks, and to prevent callousness on the part of the children, because of responsibilities inadequately performed, the entire flock, when the chicks are about a week old, is sold to children in the grade or in the school, and the chicks are sent at once to their country homes. The class, however, get much pleasure and profit from the experience of planning for the chicks and of watching them hatch.

(a) PLANNING HOW TO MAKE A SITTING HEN COMFORTABLE—

1. *The Nest.*—In class discussion, the pupils decide that the nest must be large enough for air and comfort, easy to clean, light in weight, and enclosed to keep laying hens away. Stationary receptacles for

water and grain are provided, so that hen will not get restless between children's visits.

2. *Selecting Eggs.*—This involves deciding whether we shall buy eggs or use our own; the saving of the largest and best eggs for the setting, so that chicks may be strong and healthy; and finally deciding the correct number to put under the hen.
3. *Food.*—The problems are: What constitutes the best food for a sitting hen? How often should she be taken off the nest? For how long a time should she stay off from the nest? What daily exercise should she have?

The following written* reports were made by the children to the class on their return from the chicken-house. The brief written statements were of course supplemented by oral explanations. Growth in power of expression is very evident from quarter to quarter.

FALL

I put a catch on the shed-door. Henry.

* * *

I put the shelf up. Carl.

* * *

We nailed the hopper up on the fence. Jane.

* * *

I washed the bin. The grain and bran had come. Jim.

* * *

We put a roof on the nest that Peggy and Richard had nailed up in the run. Marianne.

* * *

I dug a path in the mud so the water could drain away from the shed. Jack.

WINTER

We were going to hang up some celery, but it froze in the pan before we could get it out. We gave some alfalfa instead.

* * * Peggy.

One egg was in each open nest, and three in the closed nest. We gave the hens some scraps, celery and grain, grit, and an ear of corn.

* * * John M.

We found five eggs today. Sometimes the eggs are warm when we gather them. They are different colors. Some are brown. Some are tan colored. Some are white. Dorothy.

* * *

I found potatoes and carrots, corn-bread, meat, eggs, rice, rye and wheat-bread in the scraps. John B.

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*A list of the words that children ask for when writing their daily reports is kept. studied for spelling-lessons, and the children (using their rubber-stamp outfits) print the pages of their chicken dictionaries, which they refer to when writing. Later, these words are incorporated into their individual dictionaries.

SPRING.

We hung up six ears of corn for Saturday and Sunday. We went into the shed. Suddenly we heard a big noise in the chicken-house. We went in and saw that the corn had come down and frightened the chickens. We gave them some grain, and they were all right. MARGARET.

* * *

We got eight eggs. Goldie was on the nest. I gave the chickens some coarse grit. We need some pebbles. The children can find them on the lake shore. We saw a mouse under the bin. We think it would be a good plan to set a trap. DOROTHY.

* * *

We scraped some black soil out of the holes in the garden to sprout oats. We planted oats in the box of soil. We want someone to water them every day. There is a leak in the roof of the shed. Somebody should mend it after school. HENRY.

* * *

Charlotte and I set the sprouted oats down in the run. At first the chickens did not know how to eat them, but one smart hen got in the box and pulled them up by the roots. PEGGY.

* * *

I went to the hen-house, and there were two hens in the closed nest. I patted one of them, and then I took four eggs out of the nest, so that we got seven eggs altogether. After school I went to the hen-house again, and I found one egg, so there were eight. JANE.

* * *

We have two sitting hens now. Eleanor is the second one. We got seventeen eggs. Nick said that thirteen were laid Saturday and Sunday, and we got four this morning. JOHN.

* * *

Eleanor has been sitting two weeks and one day. I showed her some whole corn, but she would not get off her eggs. I gave her a drink. CHARLOTTE.

ELEANOR AND HER CHICKS

When we came out, we found that Eleanor was off her nest. We looked in the run, and there she was, all wet. Is it safe to have a sitting hen get wet and then sit on her eggs? BARBARA.

* * *

The chicks are hatching. First I saw one little wee head stick out under the mother's wings. Then I saw two heads stick out, a little brown one and a little yellow one. One little chick said to me, "When am I going to have my lunch? Am I going to have it with the other chickens?"

M..RIANNE.

REFERENCES

Principles and Practice of Poultry Culture, J. H. Robinson. ...*(Ginn)*.
Productive Poultry Husbandry, Lewis....................*(Lippincott)*.
U. S. Government Poultry Bulletins.

ACTIVITY III—COLONIAL PLAY AND PARTY FOR SENIORS

The setting for the colonial stories is gotten largely from:

(a) COLONIAL PICTURES.—Showing homes; ways of heating and lighting; ways of traveling; dressing; spinning and weaving.

(b) EXPERIMENTS WITH COLONIAL ARTICLES.—Trying to warm feet over a foot-warmer filled with coals from furnace, to warm blankets with a bed-warmer, to read by candle light, to make thread from wool, to spin with spindle and distaff. Excursion to Hull-House museum, to see primitive spinning and weaving.

(c) OBSERVATION OF COINS, DISHES, ETC.—Especially those made from copper, brass, pewter, iron, silver, and lead.

Experiments.—Casting in clay-molds pine-tree shilling souvenirs for seniors, made from broken toys, such as lead soldiers. Dyeing thread for bags to be given to mothers who helped with colonial party.*

Experiments to show colonial methods of dyeing.—Dyeing with copperas and iron salts (made from nails rusted in water and vinegar); dyeing with copperas and lye made in ash-hopper filled with hard-wood ashes.

Dyeing with burnt copperas and lye; with onion skins, maple-bark, walnut-hulls, sumach, peach-leaves, and sometimes with indigo, madder, cochineal, and aniline dyes.

CORRELATED READING

Weavers and Other Workers, by Jennie Hall..........*(Rand McNally)*.

ACTIVITY IV—MAKING OF MINIATURE CIRCUS

The second grader who does not attend the Ringling Brothers' Circus is a rarity. Before the thrill of that experience has faded, the children's creative powers are directed toward the making in clay and wood of a miniature circus to show to the kindergarten children.

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*Instead of weaving bags as usual the grade knitted for the Red Cross.

KNITTING BONNETS AND BLANKETS FOR THE RED CROSS

Dressed in improvised costumes, they tell their small auditors some daring exploits connected with the capture and taming of their trained animals, such as the camel, elephant, lion, tiger, and giraffe.

EXCURSIONS TO THE ZOO IN LINCOLN PARK.—The Superintendent of the Zoo allows the class to see special feedings of the animals, and personally explains and answers questions.

In class, the children study characteristic movements, habits, ways of catching, taming, and training animals, as well as the domestic use of the elephant and camel.

CORRELATED READING

Just So Stories, R. Kipling	*(Doubleday)*
Jataka Tales, E. C. Babbitt	*(Century)*
Little Black Sambo, H. Bannerman	*(Stokes)*
Reynard, the Fox, E. L. Smythe	*(Amer. Bk. Co.)*

ACTIVITY V—GARDENING

Assisted by the science teacher, the class dig up, manure, and sow in oats one end of the poultry runway, which is wired off for this purpose. Next, frames, covered with a strong wire-netting, are laid over the ground, and when the sprouted oats peep well through the wires, the chickens are allowed to range. Gourd seeds are planted, to trail over the playground pavilion, and hollyhock seeds ordered from Mt Vernon are sown along the fence bordering the poultry yard.